

When Too Much of a Good Thing Is Bad

While food shortages have plagued humankind through much of history and remain a stark reality for millions of the world's poor, health experts are now reporting that there are as many overweight people in the world today as there are undernourished.

Food is the stuff of life, but what and how much we eat is often at the root of what ails us. Dietary intake is linked to risks for developing a variety of chronic diseases that are disabling and life threatening—not only for the underfed, but also for the overweight.

Body mass index (BMI), expressed as weight divided by height (squared), is commonly used to classify overweight and obesity among adults (age 20 years and over). An estimated 64 percent of U.S. adults are either overweight or obese, according to a 1999-2000 federal survey. The U.S. Centers for Disease Control and Prevention (CDC) estimates that 21 percent of adults are obese. Severe health problems, including diabetes, heart disease, high blood pressure, kidney problems, some types of cancer, and arthritis, affect the obese at a higher rate. A recent analysis by CDC found that treatment of illnesses related to obesity costs the United States \$93 billion a year, rivaling the costs of smoking-related diseases.

According to recent studies, 1 in every 50 adults in the United States is at least 100 pounds overweight. Extreme obesity was once thought to be rare, but new evidence finds the number of obese Americans quadrupled from 1986 to 2000. Though genetics can play a role, the combination of overeating and underactivity has led to an epidemic of overweight and obesity in our country.

One component of the ARS Human Nutrition program is to study diet, genetics, lifestyle, and prevention of obesity and disease. Human Nutrition is a major program area of ARS. Its goals are to ensure the United States continues to provide a nutritious food supply and to promote nutritional health and quality of life among its citizens. It also aims to reduce morbidity and mortality associated with chronic diseases influenced by dietary intake and to conduct research that can be used to develop sound dietary recommendations and establish more effective food-assistance programs.

About 15 percent of children and adolescents ages 6 to 19 are now seriously overweight, according to the CDC. This percentage has more than doubled since the early 1970s. A collaborative study by ARS scientists in Beltsville, Maryland, and Boston and researchers at Harvard University found decreased nutritional dietary quality and increased caloric intake among U.S. children on days when they consumed fast food. ARS scientists in Houston showed that providing young

children with opportunities to select their own portion sizes resulted in their selecting smaller portions and eating less. Another ARS study in Houston is examining Hispanic children to see whether genetic and environmental factors contribute to childhood-onset obesity in this ethnic group.

These findings warn us that another generation of overweight adults may be facing eventual weight-related health conditions.

The Lower Mississippi Delta Nutrition Intervention Research Initiative (Delta NIRI) is a partnership between ARS and six institutions of higher education to determine the nutrition-related health of the population bordering the Mississippi River in Arkansas, Louisiana, and Mississippi. Residents in these three Delta states have a disproportionate occurrence of chronic diseases related to overweight, obesity, and lack of physical activities. (See story on page 4.)

An ARS research study in Boston found that a low-fat, low-calorie regimen may not only help Americans lose weight, but may also boost the immune system. Boston researchers are also studying the dietary habits of healthy people to see which foods make people gain weight. Studies done in collaboration with university researchers found that participants who ate three servings of whole grains per day had significantly lower BMIs. (See story on page 8.)

Because Congress requires USDA to survey the food intake of Americans, ARS uses a new research procedure called the Automated Multiple Pass Method to effectively gauge people's food consumption. Using survey data, ARS researchers examine diets as a factor in select diseases and help public policy officials make decisions about food safety and food fortification. (See story on page 10.)

Knowing which factors lead to food choices and how behavior affects our food intake will help researchers develop intervention strategies that can be used to change unhealthy choices in at-risk populations. ARS human nutrition research addresses the nutrient requirements needed for health, quality of life, prevention of diet-related chronic diseases, and the promotion of a nutritious food supply.

ARS currently has a network of six human nutrition research centers across the United States, plus the Delta NIRI. ARS is committed to research that furthers our understanding of the interrelationships between diet, genetics, and health as well as applying and validating strategies to stimulate healthy food, nutrition, and lifestyle behaviors. Projected long-term outcomes include improving the food supply and understanding why consumers make the food choices they do and how those choices might be modified to promote health.

Joseph T. Spence

Acting Associate Deputy Administrator
Animal Production, Product Value, and Safety
Beltsville, Maryland